

Claims

- [c1] 1.A process for producing a fire resistant polycarbonate composition, comprising:
compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition.
- [c2] 2.The process according to Claim 1, wherein the flame retardant salt is selected from the group consisting of sodium or potassium perfluoromethylbutane sulphonate; sodium or potassium perfluoromethane sulphonate; sodium or potassium perfluoroethane sulphonate; sodium or potassium perfluoropropane sulphonate; sodium or potassium perfluorohexane sulphonate; sodium or potassium perfluoroheptane sulphonate; sodium or potassium perfluorooctanesulphonate; sodium, potassium, or perfluorobutane sulfonate; and sodium or potassium diphenylsulfon-3-sulphonate; sodium or potassium dichlorobenzoate; sodium or potassium trichlorobenzoate; sodium or potassium tosylsulfphonate; and combinations comprising at least one of the foregoing salts.
- [c3] 3.The process according to Claim 1, wherein the flame retardant salt is a sodium or potassium diphenylsulfon-3-sulphonate, or a combination comprising at least one of the foregoing salts.
- [c4] 4.The process according to Claim 1, wherein the flame retardant salt is a sodium or potassium perfluorobutanesulphonate, or a combination comprising at least one of the foregoing salts.
- [c5] 5.The process according to Claim 1, wherein the flame retardant salt is potassium diphenylsulfon-3-sulphonate.
- [c6] 6.The process according to Claim 1, wherein the flame retardant salt is potassium perfluorobutanesulphonate.
- [c7] 7.The process according to Claim 1, wherein the flame retardant composition has a formula:
 $[Y'(SO_2)_z]_n Y''(SO_3M)_w$

wherein M is a metal which may be selected from the periodic table of either an alkali metal or an alkali earth metal, Y' and Y'' may be either an aryl radical of 1–2 aromatic rings or an aliphatic radical of 1–6 carbon atoms and may be the same or different, z is an integer between 0 or 1, n is an integer between 0 to 5, and w is an integer less than 6, wherein Y' and Y'' together must contain at least one aromatic ring to which the SO₃ M group is attached.

[c8] 8.The process according to Claim 1, wherein the flame retardant comprises about 0.001 to about 2.0 parts per hundred of the fire resistant polycarbonate composition on a weight basis.

[c9] 9.The process according to Claim 1, wherein the flame retardant comprises about 0.01 to about 1.0 parts per hundred of the fire resistant polycarbonate composition.

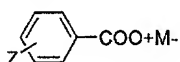
[c10] 10.The process according to Claim 1, wherein the flame retardant comprises about 0.03 to about 0.3 parts per hundred of the fire resistant polycarbonate composition.

[c11] 11.The process according to Claim 1, further comprising compounding additives selected from the group consisting of a filler, a reinforcing agent, a heat stabilizer, an antioxidant, a light stabilizer, a plasticizer, an antistatic agent, a mold releasing agent, an additional resin, a blowing agent, and combinations comprising at least one of the foregoing additives.

[c12] 12.The process according to Claim 1, wherein the flame retardant salt has a melting temperature greater than a compounding temperature for forming the fire resistant polycarbonate composition.

[c13] 13.The process according to Claim 1, wherein the aqueous solution comprises water and an alcohol.

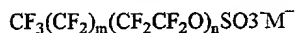
[c14] 14.The process according to Claim 1, wherein the flame retardant composition has a formula:



wherein M is a metal which may be selected from the periodic table of either an

alkali metal or an alkali earth metal, and Z is a halogen and may be the same or different.

- [c15] 15.The process according to Claim 1, wherein the flame retardant composition has a formula:



wherein M is a metal which may be selected from the periodic table of either an alkali metal or an alkali earth metal, m is an integer from 1 to 7, and n is an integer from 0 to 7, wherein the order of m and n are interchangeable.

- [c16] 16.A process for reducing haze in a fire resistant polycarbonate composition, comprising:
compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein the haze is reduced compared to compounding the flame retardant salt in solid form with the polycarbonate composition.

- [c17] 17.The process according to Claim 16, wherein the flame retardant is selected from the group consisting of sodium or potassium perfluoromethylbutane sulphonate; sodium or potassium perfluoromethane sulphonate; sodium or potassium perfluoroethane sulphonate; sodium or potassium perfluoropropane sulphonate; sodium or potassium perfluorohexane sulphonate; sodium or potassium perfluoroheptane sulphonate; sodium or potassium perfluorooctanesulphonate; sodium, potassium, or perfluorobutane sulfonate; and sodium or potassium diphenylsulfon-3-sulphonate; sodium or potassium dichlorobenzoate; sodium or potassium trichlorobenzoate; sodium or potassium tosylsulphonate; and combinations comprising at least one of the foregoing salts.

- [c18] 18.The process according to Claim 16, wherein the aqueous solution comprises water and an alcohol.

- [c19] 19.A process for reducing color in a fire resistant polycarbonate composition, comprising:
compounding an aqueous solution of a flame retardant salt with a

polycarbonate composition to form the fire resistant polycarbonate composition, wherein a yellowness index is reduced compared to compounding the flame retardant salt in solid form with the polycarbonate composition.

[c20] 20.The process according to Claim 19, wherein the flame retardant is selected from the group consisting of sodium or potassium perfluoromethylbutane sulphonate; sodium or potassium perfluoromethane sulphonate; sodium or potassium perfluoroethane sulphonate; sodium or potassium perfluoropropane sulphonate; sodium or potassium perfluorohexane sulphonate; sodium or potassium perfluoroheptane sulphonate; sodium or potassium perfluorooctanesulphonate; sodium, potassium, or perfluorobutane sulfonate; and sodium or potassium diphenylsulfon-3-sulphonate; sodium or potassium dichlorobenzoate; sodium or potassium trichlorobenzoate; sodium or potassium tosylsulphonate; and combinations comprising at least one of the foregoing salts.

[c21] 21.A process for reducing inclusions in an extruded sheet of a fire resistant polycarbonate composition, comprising:
compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition, wherein the number of inclusions is reduced compared to compounding the flame retardant salt in solid form with the polycarbonate composition.

[c22] 22.The process according to Claim 21, wherein the flame retardant is selected from the group consisting of sodium or potassium perfluoromethylbutane sulphonate; sodium or potassium perfluoromethane sulphonate; sodium or potassium perfluoroethane sulphonate; sodium or potassium perfluoropropane sulphonate; sodium or potassium perfluorohexane sulphonate; sodium or potassium perfluoroheptane sulphonate; sodium or potassium perfluorooctanesulphonate; sodium, potassium, or perfluorobutane sulfonate; and sodium or potassium diphenylsulfon-3-sulphonate; sodium or potassium dichlorobenzoate; sodium or potassium trichlorobenzoate; sodium or potassium tosylsulphonate; and combinations comprising at least one of the

foregoing salts.

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